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STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

April 28, 1992

MAY 1 1992

SUPERFUND BRANCH

Mr. Dean Fowler, Project Manager
Utility Division
Spokane County Public Works
N. 8111 Jefferson Street
Spokane, WA 99260-0180

RE: Ecology/EPA Review of Preliminary Treatment and Discharge Plan for Phase II

Dear Mr. Fowler:

Ecology and EPA have completed their review and have enclosed comments with this letter. In setting NPDES limits for discharge to the Little Spokane River, Ecology will initially require that chronic criteria for all freshwater parameters in WAC 173-201 and all chronic freshwater parameters and human health criteria in EPA Water Quality Criteria (1986) be met at the end of the discharge pipe. Ecology will initially require that the discharge not increase the concentration of phosphorus in the Little Spokane River.

require

During the iterative NPDES process, Ecology may take into consideration the possibility of a dilution zone as well as engineering and cost factors associated with groundwater treatment. Addressing the NPDES process will require analysis of the Little Spokane River and characterization of discharge effluent for priority pollutants. The information required will require major revision of the plan or submission of a seperate document. Specific comments follow:

require
revision

1) Proposed discharge limits to meet the substantive requirements of NPDES will be listed in Table 5-2 or an equivalent table. The table displaying the proposed limits will include or reference the data and information in comment numbers 1 through 6. Other comments will have to be addressed through creation of new sections of text. These NPDES comments will either require a major revision of the report or a separate document that deals solely with proposed discharge limits. We recommend a seperate document. Prior to responding to NPDES comments it is advisable to discuss the format of the response with Ecology.

2) In order to meet the substantive requirements of NPDES, Table 5-2 must be expanded to address all freshwater-chronic parameters listed in:

   A) WAC 173-201-045 Class A;
   B) WAC 173-201-047 (toxic substances); and,
   C) EPA Quality Criteria for Water 1986 (EPA 440/5-86-001).

3) In expanding Table 5-2 to address WAC 173-201-045 Class A, please list in the table all freshwater, water quality parameters of WAC 173-201-045 (Class A). If a distinction in a parameter is made between acute and chronic, use chronic. Beside each parameter give the estimated loading and concentration of the parameter to the river. Refer in the table to the appropriate appendix or section that contains all calculations and assumptions in determining loading and concentration. Note in the table the amount by which the loading or concentration exceeds or is less than the WAC criteria. If a particular parameter is not relevant to the proposed discharge, please note the non-relevance in the table, and reference an appropriate appendix or section for the reasoning behind determining non-relevance.

4) In expanding Table 5-2 to address WAC 173-201-047 (toxic substances), please list in the table every freshwater, water quality parameter in WAC 173-201-047 (Toxic substances). If a distinction in a parameter is made between acute and chronic, use chronic. Beside each parameter give the estimated loading and concentration of the parameter to the river. Refer in the table to the appropriate appendix or section that contains all calculations and assumptions in determining loading and concentration. Note in the table the amount by which the loading or concentration exceeds or is less than the WAC criteria. If a particular parameter is not relevant to the proposed discharge please note the non-relevance in the table, and reference an appropriate appendix or section for the reasoning behind determining non-relevance.

5) In expanding Table 5-2 to address EPA Quality Criteria for Water 1986, please list in the table each freshwater, water quality parameter in EPA Quality Criteria for Water 1986. If a distinction in a parameter is made between acute and chronic, use chronic. Use the most stringent value when a value is listed for both fresh water and human health. Beside each listed parameter in the table give the estimated loading and concentration of the parameter to the river. Refer in the table to the appropriate appendix or section that contains all calculations and assumptions in determining loading and concentration. Note in the table the amount by which the loading or concentration exceeds or is less than the EPA criteria. If a particular parameter is not relevant to the proposed discharge please note the non-relevance in the table, and reference an appropriate appendix or section for the reasoning behind determining non-relevance.

If parameters are contained in WAC 173-201-045 or WAC 173-201-047, make note of this in the Table 5-2. In the case of a parameter listed in both WAC or in the EPA document, use the most stringent criteria for analyses purposes.

6) If any parameter in the acid/scaling treatment of the system is found in A), B), and C) of comment number 1, note its occurrence beside the parameter in Table 5-2. Show the addition of the loading and concentration of acid/scaling treatment parameter to the parameter in

Table 5-2. Show all calculations and assumptions regarding the acid/scaling treatment parameters in an appropriate appendix or section.

7) Create a new section of text that establishes a data base for the various parameters in A), B), and C) of comment number 1. In this section use priority pollutant sample analyses data that typify the groundwater(s) that are to be treated prior to discharge. Explain why the samples analyses are considered to typify the groundwaters to be treated, and identify reasons why the sample analyses may not typify groundwater.

It is highly recommended that the data base be reviewed by Ecology, prior to proceeding with loading and concentration calculations.

8) Create a new section of text that discusses the potential for actual discharge to exceed the estimated loadings and concentrations in Table 5-2. Show all calculations and assumptions in an appropriate appendix or section.

9) Create a new section of text that demonstrates that discharge will not cause the formation of a chemical precipitate that will be harmful to human health and the environment. In making this demonstration use the major ions shown below for the river and for the groundwater(s). Show all calculations and assumptions in an appropriate appendix.

Major Ions: Bicarbonate, Calcium, Chloride, Magnesium, Nitrate, Potassium, Silica, Sodium, Sulfate, Total Hardness, Total Alkalinity and pH.

It is highly recommended that the data base be reviewed by Ecology, prior to proceeding with loading and concentration calculations.

10) Create a new section of text that identifies the percentage of flow that discharge will add to the river. Identify the gauging station(s) used in determining the river flow. If gauging data is extrapolated, justify the extrapolation. Show all calculations and assumptions in an appropriate appendix.

11) Create a new section of text that develops a conceptual monitoring plan to monitor the discharge at the point of compliance as well as upstream and downstream of the point of compliance. This plan should include sampling for priority pollutants in the discharge.

12) Discharge to the Little Spokane River should not result in an increase in phosphorous to the River. This is becasue the Little Spokane River discharges to the Spokane River, and strict control of phosphorus to the Spokane River is endorsed by Ecology, the EPA, the city of Spokane and several state and local agencies in the Memorandum of Agreement for the Spokane River Phosphorous Management Plan.

The following are comments by the EPA:

	Page	Section	Comment
13)	2-5	2.2.2.1	Line 8. Typographical error: "8 gallons/day"
14)	2-6	2.2.2.3	When diluting acid, it is a safer practice to add acid to water.
15)	2-7	2.2.2.3	Specify allowable pH range for discharging spent batch cleaning solution into effluent piping system.
16)		2.2.3	It is understood that the type of sequestering agent to be used will depend on the success of the non-phosphate agent. How will this performance be checked and under what criteria will the selection be made?
17)	3-3	3.4	Demonstrate that minimum pressure (200 psig) rating is sufficient for water hammer. Specify the maximum allowable deflection for pipeline installation. Confirm that 4.5 feet depth is below the frostline. Hydrostatic testing should be performed on a certain maximum length of piping (normally less that 1,500 feet). Specify maximum allowable leakage and testing source.
18)	3-4	3.4	Specify backfill lift thickness.
19)	5-2	5.3	Normally, the NPDES compliance sampling location is at the point of discharge, not at the receiving body of water, and generally the NPDES permit will specify sampling frequency and required parameters.
20)	B-6	10)	a_w = Specific wetted packing surface area. $a_w < 38$ ft^2/ft^3 for 3.5" Jaegar Tripacks.
21)	D-11	16)	This equation is acceptable for comparing energy requirements, but not for sizing blowers. Also, other losses are generally much grater than 10% of packing loss.
22)	D-11	17)	This equation is acceptable for comparing energy requirements, but not for sizing pumps. Also, other losses are likely to be greater than 10% of vertical lift.

23)	Table D-2		Correct description: K_1a,a - Actual overall liquid phase mass transfer coefficient.
24)	E-2	1.3.B.3	Does the required 30-year design life of the system include blowers and other equipment?
25)	E-7	2.1.D	Define "energy efficient operation."
26)	E-9	2.2	Add lighting protection requirements.
		2.2.F	Pressure taps should be located at the air inlet and at 1/2 (or 1/3 and 2/3) of the packing height. Pressure at the top of the packing would be close to zero.
27)	E-10	2.5.A	Typographical error: "shall be."
			Potentially conflicting to section 2.5.C for material selection.
28)	E-1	2.5.C	Packing material shape and configuration have been fixed by Table 2-4 (Jaegar Tripacks).
29)	E-12	2.6.F	Provide specific NEMA reference.
30)		2.7	Add: "The duct shall have sufficient length of straight run for pitot tube installation."
31)		2.8.A	Provide specific NEMA reference.
32)		2.8.D	Paddle type flow switches generally do not allow set point adjustments. A pitot tube-pressure differential gauge/switch combination can provide both accuracy and flexibility.
33)	E-13	2.8.G	Temperature sensor should be installed at 1/2 the tower height because water has a much higher heat capacity than air.
34)	Drawings		Drawings K-2 and K-3 are identical. The legend is not identified. Some symbols are not identified in the legend.
35)	K-2		The need for acid addition (pre- and post- stripping) and batch acid cleaning should be identified in the 30% design phase (if sequestering has been chosen a the primary scale control process). If conclusive evidence cannot be achieved before the final design, the scale control equipment should not be installed at the initial phase od the construction. Those processes are relatively independent to the air

stripping process and can be added on later if deemed necessary, as long as space and piping connection are reserved. In addition, the batch acid cleaning process is estimated to be performed less than twice a year (pages 2-11 and 2-6). Portable equipment, such as tanker trucks equipped with pumps, could be more cost effective.

The need for effluent piping acid addition can be evaluated by the "Langelier Index" of aerated groundwater.

36) General — Units should be stated in mg/L, pg/L, psig, and scfm, instead of ppm, ppb, psi, and cfm, respectively.

If you have any questions about these comments, please telephone Neil Thompson or me.

Sincerely,

Michael Kuntz

Michael Kuntz

MK:ln

cc: Neil Thompson